

Claims

[c1] A method for creating a secure program history log for a programmable device including a microprocessor, at least one communications port for communicating with the microprocessor and at least one memory device electrically connected to the microprocessor, the memory device including a program history log, said method comprising:
communicating program parameters to the microprocessor;
creating a log entry utilizing the microprocessor and the program parameters; and
writing the log entry into the program history log utilizing the microprocessor.

[c2] A method in accordance with Claim 1 wherein communicating program parameters comprises inputting program parameters utilizing the communications ports.

[c3] A method in accordance with Claim 1 wherein creating the log entry comprises:
generating at least one of an entry sequence number, a date and time stamp, a transaction number, and a table identifier; and
including at least one of the entry sequence number, date and time stamp, transaction number and table identifier in the log entry.

[c4] A method in accordance with Claim 1 wherein writing the log entry into the program history log includes writing the log entry to the program history log such that the log entry may not be changed after it is written.

[c5] A method in accordance with Claim 1 wherein writing the log entry into the program history log comprises:
writing log entries to different locations in the program history log until the program history log is full; and
overwriting an oldest log entry with a new log entry once the program history log is full.

[c6] A method in accordance with Claim 1 wherein said step of writing the log entry into the program history log comprises prohibiting alteration of any log entry except when a master reset function is enabled.

[c7] A method in accordance with Claim 1 further comprising reading at least one of the entire program history log and an individual log entry externally through the communications port.

[c8] A method in accordance with Claim 7 wherein said method further comprises maintaining a pointer that points to the last log entry read; and overwriting the log entry indicated by the pointer with a new log entry.

[c9] A method in accordance with Claim 1 wherein the system further includes a first computer external to the programmable device for communicating with the programmable device, the first computer including programming software and a second memory device, said method further comprising:
communicating the program parameters to the first computer;
executing the programming software to program the programmable device based on the program parameters;
creating at least one record utilizing the programming software and the program parameters; and
storing the record in the second memory device.

[c10] A method in accordance with Claim 9 further comprising writing the contents of the second memory device to a write-once medium.

[c11] A method in accordance with Claim 1 wherein the programmable device is an electronic electricity meter, said step of communicating program parameters to the microprocessor comprising the step of communicating meter parameters to the microprocessor for determining energy consumption.

[c12] A system for creating a secure program history log for a programmable device comprising:
at least one communications port, said communications port configured to receive inputs comprising program parameters;
a microprocessor configured to receive said program parameters from said communications port and create a log entry based on said program parameters; and
at least one memory device electrically connected to said microprocessor and comprising said program history log, said microprocessor further configured to write said log entry into said program history log, thereby protecting said program history log from manipulation via direct communication from said communications port.

[c13] A system in accordance with Claim 12 wherein said programmable devices comprises an

electronic electricity meter.

[c14] A system in accordance with Claim 13 wherein said log entry comprises at least one of a transaction number, a date and time stamp, an entry sequence number, and a table identifier.

[c15] A system in accordance with Claim 13 wherein said system is configured to prohibit alteration of any log entry once it is written into the program history log.

[c16] An electronic electricity meter comprising:
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a communications port, said communications port configured to receive meter input parameters;
a microprocessor configured to receive said meter input parameters from said communications port and determine energy consumption based upon said meter input parameters, said microprocessor further configured to create a program history log entry when meter parameters are received; and
at least one memory device electrically connected to said microprocessor and comprising a program history log, said microprocessor further configured to write said log entry into said program history log.

[c17] An electronic electricity meter in accordance with Claim 16, said meter configured to allow reading of said program history log through said communications port and configured to prohibit direct input into said program history log from said communications port.

[c18] An electronic electricity meter in accordance with Claim 17, said program history log entry comprising at least one of an entry sequence number, a transaction number, a date and time stamp, and a table identifier.

[c19] An electronic electricity meter in accordance with Claim 16 wherein said at least one memory device comprises a first memory and a second memory, one of said first and second memory comprising meter input parameters and the other of said first and second memory comprising said program history log.

[c20] An electronic electricity meter comprising:
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a microprocessor configured to determine energy consumption based upon at least one

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meter input parameter;

at least one memory device electrically connected to said microprocessor and comprising a program history log; and

a communications port, said communications port configured to receive said at least one meter input parameter for use by said microprocessor; said microprocessor configured to create a program history log entry and configured to write said log entry into said program history log when said at least one meter parameter is received, said program history log comprising at least one of an entry sequence number, a transaction number, a date and time stamp, and a table identifier.

[c21] An electronic electricity meter in accordance with Claim 20, said meter configured to allow reading of said program history log through said communications port and configured to prohibit direct input into said program history log from said communications port.

[c22] An electronic electricity meter in accordance with Claim 20 wherein said at least one memory device comprises a first memory and a second memory, one of said first and second memory comprising meter input parameters and the other of said first and second memory comprising said program history log.